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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,289	12/07/2001	Pierre LeBrun	01184	4897

23338 7590 06/27/2003

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EXAMINER

KASTLER, SCOTT R

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/926,289

Applicant(s)

LEBRUN ET AL.

Examiner

Scott Kastler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17-35 and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Montgrain. Montgrain teaches a device and method for injection of gas bubbles into a molten metal contained in a treatment volume (20) where the device includes a static injection part (7) made of an inert material which at col. 6, lines 23-32 for example states that the part may be made of graphite (stated by the applicant to be non-wettable to molten aluminum at page 10 of the instant specification for example), iron, silicon carbide (a refractory carbide) or refractory metals (all stated by the applicant, at claim 3 for example, to be wettable by molten aluminum), where the static part (7) includes a number of orifices (4) located at the top of tapered protuberances (3) which are removable (by cutting for example), with a single orifice in each protuberance, configured to mechanically (geometrically) limit the contact area of the orifices, and bubble size so that bubbles do not come into contact while they are being formed (see col. 2 lines 39-41 for example), bubble size being limited to 10mm or below (see col. 7 line 37 for example), where the flow of the molten metal through the trough (20) provides a shear force to the molten metal, thereby showing all aspects of the above claims since, when using non wettable graphite, the ratio of protuberance diameter to orifice diameter is 5 (see col. 3 lines 19-21 where a protuberance diameter of 5 mm is cited and an orifice diameter of 1 mm is cited), and in any event, with respect to non-wettable materials, the use of non-wettable materials, such as

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the iron, silicon carbide or refractory metals used by Montgrain, provides a spreading ratio within the recited limits, as stated by the applicant at page 4, lines 11-15, and page 4, line 26 to page 5 line 15.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montgrain in view of Manabu et al. As applied to claim 17 above, Montgrain shows all aspects of the above claims except the use of bubble detection means for monitoring the bubble size. Manabu et al, cited by the applicant, teaches that bubbles in molten metal are known to be monitored by x-ray monitoring in order to more effectively control the gas introduction process. Because more effective control of the gas introduction process would also be desirable in the system disclosed by Montgrain, motivation to include x-ray monitoring means, as taught by Manabu et al, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

### ***Response to Arguments***

Applicant's arguments filed on 5-13-2003 have been fully considered but they are not persuasive. Applicant's arguments that Montgrain does not teach a device expressly reciting the

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instantly claimed spreading ratios is not persuasive. As stated in the above rejections, Montgrain teaches a device employing both materials wettable by the molten metal contacted and device geometries which are specifically stated by the applicant in both the specification and the arguments filed on 5-13-2003 to inherently provide spreading ratios within the claimed ranges. Applicant clearly states, on page 9 of the arguments for example, that "the use of wettable materials leads to spreading ratios much smaller than 5 and usually close to 1,". The materials employed by Montgrain (graphite for example) are stated by the applicant to be inherently wettable by molten aluminum. Since applicant's state that the materials and geometries recited by Montgrain would inherently produce spreading ratios meeting the requirements of the rejected claims, Montgrain anticipates that above claims. See MPEP 2112.

Applicant's response filed on 5-13-2003 has however, overcome all rejections under 35 USC 112 and claim objections of claims 1-16, by canceling these claims.

Applicant's response on 5-13-2003 with respect to the inclusion of a brief description of the drawings is noted and this objection has also been withdrawn.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (703) 308-2506. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-3050. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

  
Scott Kastler  
Primary Examiner  
Art Unit 1742

sk  
June 27, 2003